APPLICATION

FOR

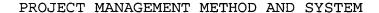# UNITED STATES LETTERS PATENT

APPLICANT(S) NAME: G. Vahee et al

TITLE: PROJECT MANAGEMENT METHOD AND SYSTEM

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INTERNATIONAL BUSINESS MACHINES CORPORATION

PROJECT MANAGEMENT METHOD AND SYSTEM

TECHNICAL FIELD

The invention relates generally to management of projects in
a company or other organization. More specifically, the
5   invention is concerned with a method, system, tool, and computer
program product for performing project management of one or more
projects involving a plurality of process listings, work
patterns, and links throughout the process listings.

BACKGROUND OF THE INVENTION

10   Efficient management of projects in a company or other
organization is an increasing problem as the number and
complexity of projects increases. An individual project may for
example be directed to development of a product for sale by a
company and involve a large number e.g. > 100 activities, herein
15   called processes. It is therefore desirable that some system or
method be used to monitor, regulate, control, and coordinate the
various processes in a beneficial manner. The overall objective
may be to accelerate a product development schedule or maximize
efficiency of resource utilization, minimize development cost,
20   resulting product cost or any other defined criteria.

Ladd, in US Patent 5,864,480 describes a system, method, and
computer programs for assisting a user through the process of
developing an electronic product and/or documentation. The
system uses a computer with a monitor and memory. Stored in the
25   memory is an electronic representation of a product to be
developed and a process for the development of the product. The
electronic representation of the process includes a process life-

cycle tree divided into phase realization subtrees.   Each
subtree has elements such as a document, a deliverable, a
milestone, a decision point, or a schedule.   The user interacts
with the tree and subtrees using programs executed on a computer
5   to control product development.

Song and Montoya-Weiss in their paper entitled "Critical
Development Activities for Really New Versus Incremental
Products," published in the Journal of Prod. Innov. Manag., vol.
15, no. 2, March 1998, p.124-135 describe product development
10   activities for both new and incremental products.   They describe
a model linking new product profitability to the proficiency
level of activities (processes).   The model suggests when and on
what processes, project management should concentrate resources
to achieve higher levels of success.

A project may be directed to production of products or
providing services rather than product development.   Morgan et
al. in US Patent 5,799,286 describe an automated activity-based
method and system for managing a business organization.   A user
at a computer workstation enters activity information. The system
20   automatically downloads and stores accounting information
associated with the activities in a relational database along
with the activity information.   A database server maps expenses
to the various activities and may generate reports to use in
managing the project.

25   Ackroff et al in U.S. Patent 5,721,913 describe a system and
method for managing the workflow of activities in a business
organization.   The system is computer-based and includes an
information database of data records for independent activities.

Data objects are linked dependent upon the type of activity to be managed, and data records contain attribute information for the linked data objects. Activities are then controlled by controlling processing of the attribute information within each
5   data record.

Various tools herein called technical methods have been developed for implementing a solution once the desired processes and relationships are known. Microsoft Project 2000 available from the Microsoft Corp. Redmond WA and PM Office available from
10   Systemcorp®, Systemcorp is a registered trademark of Systemcorp, Inc. of Montreal Canada, are examples of such tools.

All of the aforementioned methods and tools have limitations for general use because the important steps of process definition and relationship definition are not addressed. It would
15   therefore be a desirable goal to provide an improved project management method and system capable of handling these important parts of project management, and be capable of employment across a much broader range of project types. It is believed that such a method and system would constitute a significant advancement in
20   the art.

OBJECTS AND SUMMARY OF THE INVENTION

It is therefore a principal object of the present invention to enhance the project management art by providing a process for managing projects with enhanced capabilities.

25   It is another object to provide a business process for transferring a business need into a strategy for providing a

solution to the need by building a project management tool and operating the tool to provide the solution.

It is a further object to provide a system and a tool for project management having enhanced capabilities.

5   It is yet another object to provide a computer program product with enhanced capability for managing a project.

These and other objects are attained in accordance with one embodiment of the invention wherein there is provided a process for managing a project, comprising the steps of, building a project management data model having entities and relationships described by text and graphical data, entering the project management data model in a relational database, building a project management tool having web pages from the text and graphical data, generating hyperlinks in the web pages of the tool based on the relationships in the relational database, and using the tool to manage the project.

In accordance with another embodiment of the invention there is provided a project management tool, comprising, a plurality of process listings, each process listing providing guidance about how to undertake an activity, a plurality of work patterns, each work pattern describing a response to a project management situation and having threads throughout the plurality of process listings, a plurality of work product documents linked to the plurality of process listings, the documents describing items used to manage a project, word processor templates for the work product documents describing plans, procedures, and records, and procedures for the process listings.

In accordance with another embodiment of the invention there is provided a computer program product for instructing a processor to provide a method of project management, the computer program product comprising, a computer readable medium, first program instruction means for building a project management data model having entities and relationships described by text and graphical data, second program instruction means for entering the project management data model in a relational database, third program instruction means for building a project management tool comprising web pages from the text and graphical data, fourth program instruction means for generating hyperlinks in the web pages of the tool based on the relationships in the relational database, and fifth program instruction means for using the tool to manage the project, and wherein all the program instruction means are recorded on the medium.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a flowchart of a process for managing a project in accordance with one embodiment of the invention;

FIG. 2 is a block diagram of a system for managing a project; and

FIG. 3 shows the link between work patterns and processes.

BEST MODE FOR CARRYING OUT THE INVENTION

For a better understanding of the present invention, together with other and further objects, advantages and capabilities thereof, reference is made to the following
5   disclosure and the appended claims in connection with the above-described drawings.

In FIG.1 there is shown a flowchart of steps depicting a process for managing a project. Although shown for convenience of understanding as a sequence with arrows between steps, that is
10   not to imply that a particular step can not be started before another is completed. In fact there is no sequential limitation between the steps in any embodiment of the invention other than as may be required by a corresponding appended claim below.

In step 11 a project management data model is built. The data model has entities and relationships (not shown) which may be described by text and graphical data. Text data may be in any form known for recording text including hardcopy, word processor data, or an audio recording of spoken text. Graphical data may
20   include printed graphs, figures, and photographs, or it may also include digitized graphical data using any known format such as bit map (BMP), Joint Photographics Expert Group (JPEG), or any other method of representing graphical data. Graphical data may also include moving data such as animations or motion picture
25   clips, sound clips, or other forms of data known in the art.

In step 12 the text and graphical data is entered into a relational database. Any type of relational database may be used such as DB2® (DB2 is a registered trademark of IBM Corporation). A specially developed relational database may also be used. The

relational database preferably includes a data description
language (DDL) adapted to use in a project management tool.

One method of inserting the text and graphical data involves
use of a parser (not shown). The parser knows the relationships
5   of the data model. The parser reads the text, transforms it to a
rich text format (RTF) and adds tags at the beginning and end of
text corresponding to the entities which indicate the
relationships. Any word processor capable of handling RTF or an
equivalent format, such as LOTUS WORD PRO, Lotus Work Pro is a
10   trademark of Lotus Development, Corp. Cambridge, MA, may be used.
The text data may then be automatically stored in the right
places, based on the tags, into a relational database using a
tool such as Qualiware QLM22 available from QualiWare ApS, P.O.
Box 60, Skovlytoften 9B, DK-2840 Holte, Denmark.

In step 13 a project management tool is built having web
pages. The web pages are created from the text and graphical
data. For example, a web page may contain text presenting a
domain 27, what the domain is used for, and a list of sub-domains
28 it contains. The list of sub-domains is created using the
20   relationships between a domain and the sub-domains in the
relational database. For each sub-domain a web page presents the
sub-domain and the list of processes 21 it contains. Text in a
web page results from transforming the corresponding text stored
in the relational database.

25   In step 14, links are added to the web pages based on the
relationships in the data model of step 11.

The project is then managed in step 15 using the tool.
Managing may include using the guidance and templates included in

the tool.   It may also include inquiring the tool to determine
what actions should be taken to read to an event.   It may also
include finding detailed explanations of how to periodically
(e.g., monthly) report the status of a project.

5   One way of creating the web pages and adding the links is to
use a generator tool (not shown).   The generator tool first
builds HTML web pages having empty boxes for the text and
graphical data, and links.   The generator then fills in the boxes
with the appropriate text and graphical data from the relational
10   database.

           In FIG. 2 there is shown a block diagram of a system for
project management in accordance with another embodiment of the
present invention.   A work pattern group 25 has one or more work
patterns 22 for the project management methods of defining,
planning, starting, monitoring, handling exceptions, handling
deliveries, or closing of a project.   Each work pattern 22 links
processes in a series of useful scenarios such as will be
described below in relation to FIG. 3.   The work pattern is a set
of steps 26 to achieve an activity or reach a goal.   The work
20   pattern helps a project manager respond to events and provides a
timeline view through domains 27.

           Each work pattern step 26 typically includes a 2 or 3 line
description of the step referencing one or more process listings
21.   Each process listing provides guidance to a project manager
25   in the form of typically 1, 2, or 3 pages of text describing what
the project manager should be considering during that step. Some
processes are proceduralized by being described by a written
procedure 29.

A domain 27 describes project management processes in a series of topic areas such as work plan management, technical environment management, tracking and control, supplier management, sponsor agreement management, risk management,

5   quality management, project definition, human resource management, event management, deliverables management, communications management, or change management. A domain may have sub-domains 28 which then reference the process listings 21.

The system for project management of FIG. 2 also includes

10   work product documents 23 which describe the items such as process inputs and outputs, procedures, plans, reports, forms and logs, a project manager uses to manage a project. Work product documents may include the examples shown below in Table 1.

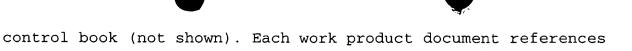|	
Action log	Project charter
Agreement	Project definition
Change request	Project management schedule
Communications management plan	Project quality plan
	Risk Management Plan
Deliverable definition	Staff Schedule
Human resource plan	Sub-project/team status
Issue document	report
Milestone list	Work breakdown structure
Operational schedule	(WBS)
Organizational breakdown structure (OBS)	
Product breakdown structure (PBS)	

TABLE 1

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A work product document 23 may include a word processor template 24 which can be filled in for the particular project being managed. The word processor templates 24 may then be stored in a hardcopy or on-line in softcopy form of project

control book (not shown). Each work product document references and is referenced by one or more process listings 21.

In FIG. 3 there is shown a diagram 30 describing how work patterns 22 and process listings 21 of FIG. 2 are linked. A work pattern 35 includes one or more series of steps 36. Each step 36 references a process listing within a domain such as 31, 32, 33, 34. The work pattern provides the linkage between and may have threads throughout the process listings to achieve the desired activity or goal. A project manager may therefore use the system of FIG. 2 by entering though either the domain 27 or work patterns group elements described above.

While there have been shown and described what are at present considered the preferred embodiments of the invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the scope of the invention as defined by the appended claims.